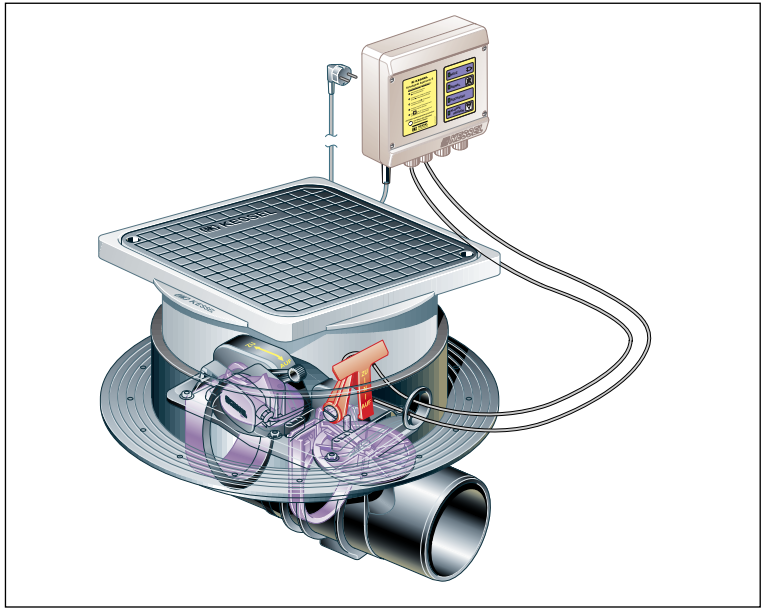
INSTALLATION AND USER'S MANUAL



The installation and service of this unit should be carried out by a licensed professional servicer.

Company -
Telephone No.

KESSEL-*Staufix*® *FKA* Backwater Valve

- **Double flap backwater valve with motorized flap and manual closure lever**
- **Optical probe for backwater detection**
- **For sewage and greywater**
- **Control unit with SDS (Self Diagnosis System)**
- **Automatic closure during backwater**
- **Simple access for maintenance**
- **Simple installation of replacement parts**
- **Rotatable, tiltable and vertically adjustable cover (1.5 ton load class)**
- **Also available for exposed / suspended pipe**
- **Upgradable to *Pumpfix*® F backwater valve with integrated sewage pump.**

(Subject to technical amendments) Rev. 06/2000-HG Sach-Nr. 010-180

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1. Safety instructions

Dear customer,

Before placing the KESSEL *Staufix*® FKA in service, please carefully read and follow this Installation and User's Manual. The information provided in this manual is valuable and will help provide years of safe and reliable service of the KESSEL *Staufix*® FKA backwater valve.

Upon receipt of the *Staufix*® FKA please check to make sure that it has been delivered undamaged. In the case that the *Staufix*® FKA has been damaged during delivery, please follow the warranty instructions in Chapter 12.

Important

Always unplug the *Staufix*® FKA before inspection or maintenance!

Use caution during installation, inspection, maintenance, use and repair of this product.

Do not manually move the black motor lever on the cover of the *Staufix*® FKA while the motor is installed as this can damage the motor. This black motor lever can be manually moved if the motor has been removed.

The *Staufix*® FKA is not to be installed in an area which is or could be subject to explosion.

The *Staufix*® FKA uses electricity and moving mechanical parts. Not following the Installation and User's Manual could result in bodily injury or a fatal accident.

If at any time the electrical cables or any other part of the *Staufix*® FKA is damaged, the backwater valve should in no way be placed into operation.

Do not inspect or maintain the *Staufix*® FKA during times of backwater or during times of risk of backwater (heavy rain / flooding).

The backwater flaps, motorized lever and the manual closure lever must always have full range of motion.

KESSEL recommends that a maintenance contract be signed with a licensed professional servicer.

2. General

2.1 Areas of application

The *Staufix®* FKA is designed to be installed in a downward sloped, continous run drainage pipe. In this application the *Staufix®* FKA will provide through drainage during normal conditions and protection against backwater during times of backwater.

2.2 *Staufix®* FKA description

The *Staufix®* FKA electronic backwater valve consists of:

- a body with motorized and manually operated backwater flaps
- a motor (IP68, limited submersibility) to operate the motorized flap
- an optical probe (IP 68, limited submersibility)
- a splash proof control unit (120V - 60Hz or 230V - 50 Hz) with back up batteries (two 9 volts) for operation of the *Staufix®* FKA for up to 10 hours after power failures
- Installation and User's Manual
- Funnel for watertight test

2.3 When to install the *Staufix®* FKA

If the *Staufix®* FKA is being installed during the construction phase only the body of the valve and cover should be installed (the motor, optical probe and control unit should not be installed or connnected) (Chapter 3). During this time make sure to store the electrical components in a clean and dry place. When the construction phase is over the motor and optical probe should be installed in the cover of the valve, the control unit mounted on a nearby wall and all necessary electrical connections made. This will help prevent damage to the mechanical and electrical equipment of the *Staufix®* FKA during the construction phase.

During the construction phase the two closure levers of the *Staufix®* FKA can be manually set in three different positions to provide different protection options before all the electrical connections to the *Staufix® FKA* are made. The red manual closure lever and the motorized backwater flap lever can be both set in the 'FLAP LOCKED CLOSED' position which will completely shut both backwater flaps and not allow flow in either direction. The red manual closure

lever can also be set in the ‘FLAP OPEN (F R E E HANGING)’ position (lever is vertical) and the motorized backwater lever in the ‘FLAP OPEN (OUT OF FLOW)’ position which allows plumbing fixtures to be drained through the valve and also provides protection against backwater because the manual backwater flap is in a closed but free hanging position. The red manual closure lever and the motorized backwater flap lever can also both be set in the ‘FLAP OPEN (OUT OF FLOW)’ position by releasing the flexible tab in the middle of the red manual closure lever from the tab stop and pulling the lever all the way back until it goes no further (beyond vertical). At this setting the manual backwater flap is completely open and will allow plumbing fixtures to be drained through the valve.

2.4 Upgradability

The KESSEL *Staufix®* FKA can be easily upgraded to the KESSEL *Pumpfix®* F electronic backwater valve with optical probe, intregrated sewage pump and control unit (North American Option -8, please specify pipe size / European Order Number 28079 for 3 inch pipe, Order Number 28080 for 4 inch pipe or Order Number 28081 for 6 inch pipe).

3. Installation

Please note:
The drainage pipe to which the *Staufix®* FKA is connected is installed at the slope required by the local governing code. It is recommended that all plumbing fixtures above the backwater level be connected downstream of the *Staufix®* FKA since these fixtures do not need to be protected against backwater. Only fixtures below the backwater level should be plumbed through the *Staufix®* FKA.

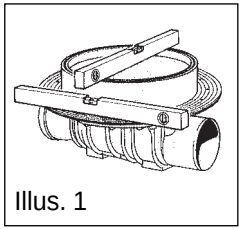
3.1 Installation in a concrete slab / floor

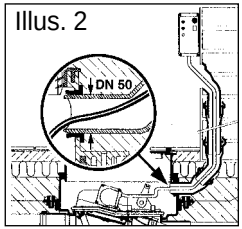
North American Product Numbers 65023, 65024 and 65026 / European Product Numbers 83100 S or X, 83125 S or X and 83150 S or X.

The body of the *Staufix®* FKA should be installed level as shown in Illustration 1. The electrical cables connecting the *Staufix®* FKA to the control unit should be run through a 1.5 inch Schedule 40 DWV pipe (DN 50) as shown in Illustration 2 + 5. Grease and install the included rubber gasket between the *Staufix®* FKA body and the access chamber as shown in Illustration. 3. As seen in Illustration 4, the access chamber of the *Staufix®* FKA body is completely adjustable. This access chamber can be raised or lowered to meet floor heights, tilted laterally to meet grades in the floor and rotated to match floor patterns.

3.2 Deep installation in a concrete slab / floor

For deep installation depths use extension section (North American Option -4 / European Product Number 83070 (adds 7 inches / 180mm)). If installing an extension section make sure to grease the rubber gasket. If more than one extension section is needed, make sure not to install the *Pumpfix®* F so deep that access to the valve for inspection and maintenance is hindered.


Illus. 1



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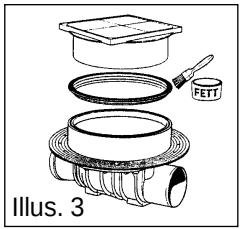

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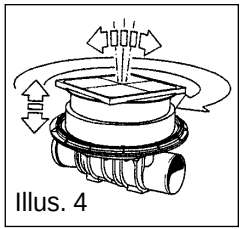
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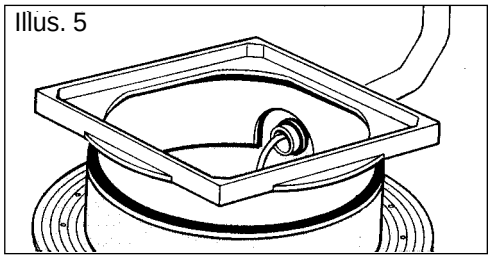
Illus. 5

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3. Installation

3.3 Installation subject to groundwater

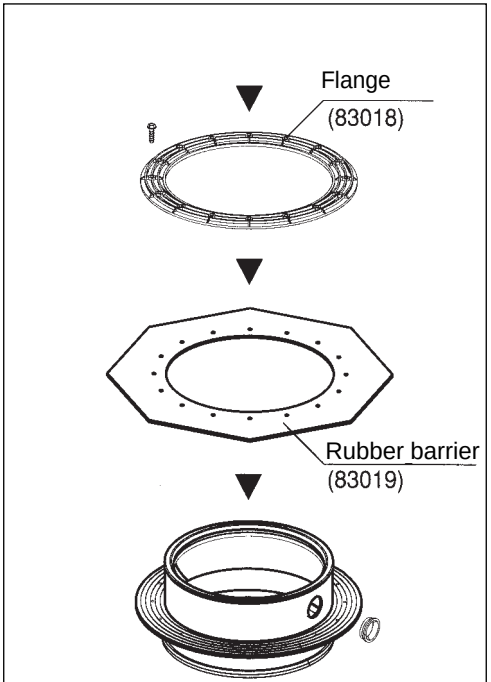
There are certain circumstances where the upward force of groundwater can penetrate through slab installed fixtures and cause moisture problems. The KESSEL *Staufix®* FKA provides protection against the upward force of groundwater by including the water barrier (North American Option -5 / European Product Number 83019 (rubber barrier) and 83018 (flange)) during installation. This barrier is simply placed between the body of the *Staufix®* FKA and the flange which is then bolted tight with the included bolts as shown in Illustration 6.

3.4 Installation in an exposed / suspended pipe

(North American Product Numbers 65033, 65034 and 65036 / European Product Numbers 83100, 83125 and 83150)
The *Staufix®* FKA backwater valve, designed to be installed in an exposed / suspended pipe, comes equipped with a see-thru, easily removable protective cover.

The motor cable and the optical probe cable should be run through their two respective holes in the body of the valve. Firmly tighten the 2 nuts to secure the cables.

ATTENTION:
Make sure that no cables or other objects impair the movement of the motorized closure lever and the manual closure lever or interfere with the operation, inspection or maintenance of the valve.

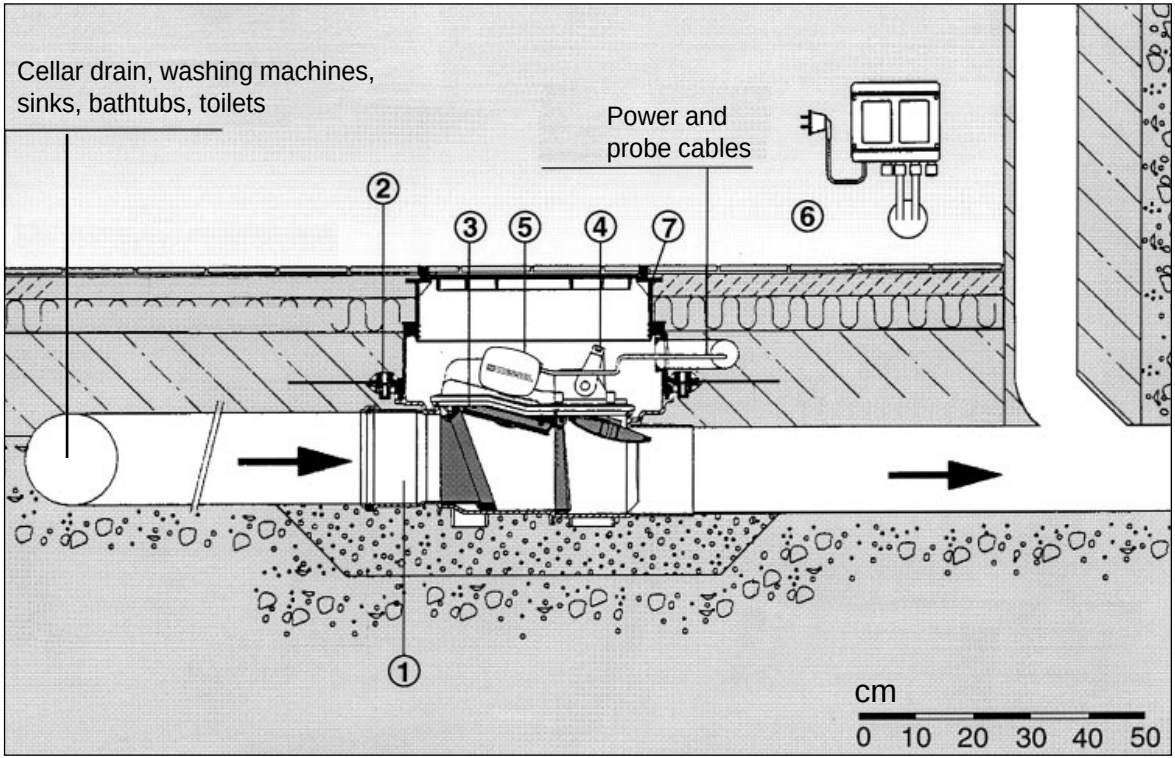


Illus. 6

3. Installation

3.5 Installation Example

① ***Staufix*® FKA**
② Flange
③ Motorized backwater flap
④ Manual closure lever
⑤ Motor
⑥ Control unit
⑦ Cover (Load capacility - 1.5 tons)



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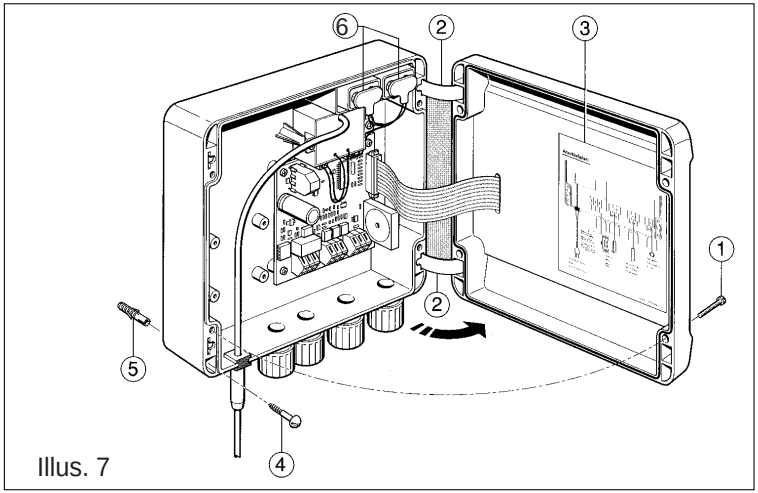
4. Electrical connections

4.1 Wall mounting of the control unit

As always, make sure the control unit is disconnected from the power supply before opening the cover!

Unscrew the four screws located in each corner of the front of the control unit and open the cover. In each corner of the inside of the control unit will be four holes for mounting the control unit to the wall (as seen in Illusration 7). Included with the control unit are 4 mounting screws, 4 plastic wall plugs and a drilling template which is printed on the cardboard control unit box.



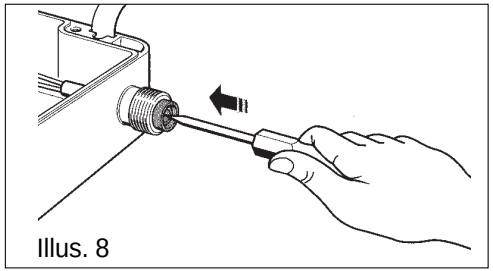
Illus. 7

① Cover screws (x4)
② Hinges (x2)
③ Connection diagram
④ Mounting screws (x4)
⑤ Plastic wall plugs (x4)
⑥ 9 volt batteries (x2)

4.2 Cable connections

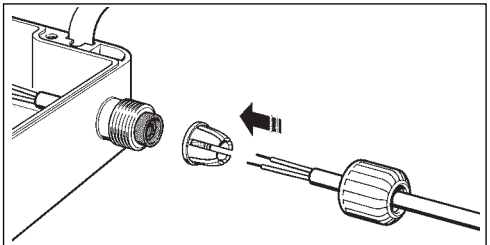
An electrical connection plan is located on the inside of the control unit cover.

Open and pierce the two middle gaskets on the bottom of the control panel (as seen in Illustration 8). Push the nut and hand bolt onto each cable (as seen in Illustration 9). Insert the cable for the motor through the left


Illus. 8

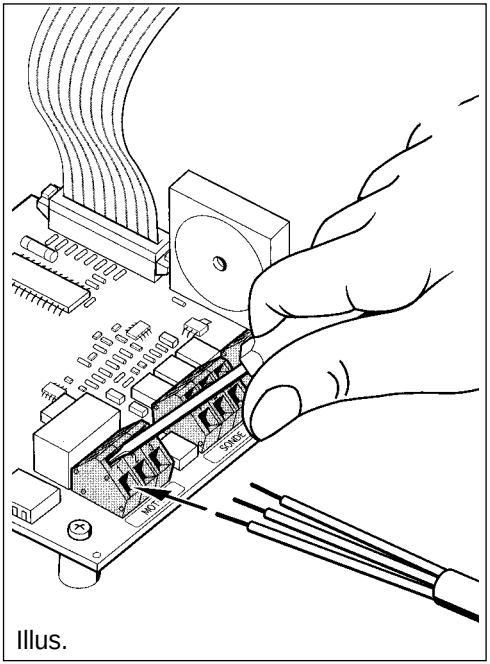
pierced gasket and the cable for the optical probe through the right pierced gasket and into the control unit making sure to pull only enough cable into the control unit to make the necessary connections. Secure the cables to the control unit box (as seen in Illus. 9) by tightening the plastic hand bolts.

4. Electrical connections



Illus. 9

To connect the wires, firmly insert a small screwdriver into the upper opening of each jack and push up (as seen in Illustration 10). This opens the terminal below. Insert the lead of the corresponding wire into the lower opening of the jack and release the screwdriver. This will connect the wire. Now connect the wires of the motor and the optical probe to their respective terminals (as seen in Illustration 10). The three wires for the motor are labelled ‘1’, ‘2’ and ‘3’ and should be connected to the corresponding numbered wire jacks on the jacks marked ‘MOTOR’. The three wires for the optical probe are also labelled ‘1’, ‘2’ and ‘3’ and

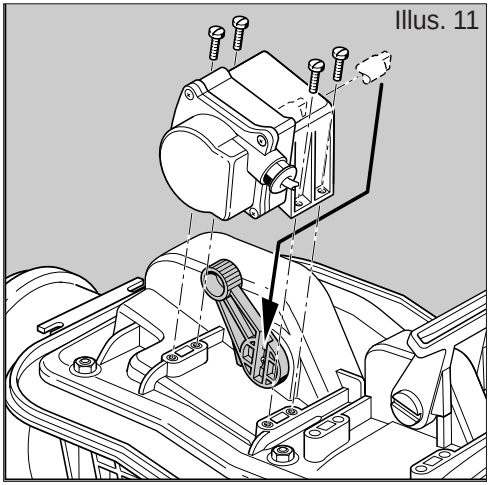


Illus.

should be connected to the corresponding numbered wire jacks on the jacks marked ‘SONDE’.

4.3 Installing the motor

Remove the four white plastic protectors from the motor screw holes on the cover of the *Staufix®* FKA. Make sure the black lever on the cover of the *Staufix®* FKA for the motorized flap is in the ‘FLAP LOCKED CLOSED’ position. If it is not, close it by hand. Place the motor over the four screw holes on the *Staufix®* FKA cover and also



Illus. 11

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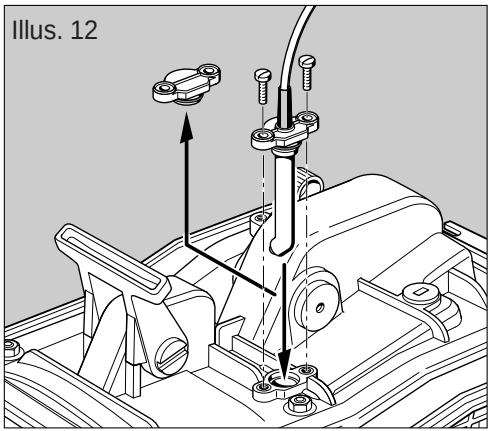
4. Electrical connections

make sure that the drive shaft of the motor fits into the drive shaft slot on the black lever (as seen in Illustration 11). Secure the motor firmly with the four included screws.

4.4 Installing the optical probe

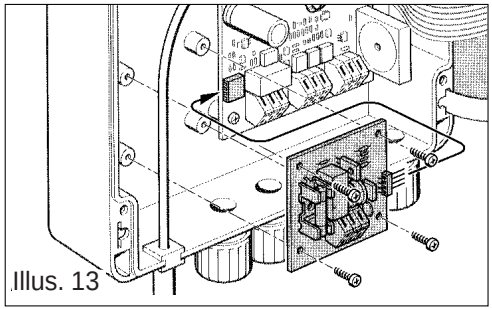
To install the optical probe into the *Staufix®* FKA simply remove the small purple plug from the cover of the *Staufix®* FKA by unscrewing the two screws. Now insert the probe and tighten with the same two screws (as seen in Illustration 12). The optical probe is designed so that it can only be installed the proper way.


Illus. 12

4.5 Audible signalling device with extension cable

An optional audible signalling device with extension cable (North American Option -6 / European Product Number 20162) can be connected if it is required that the audible warning signal be located in other areas of the building.

4.6 Signalling device with auxiliary connection


Illus. 13

An optional additional circuit board with an auxiliary connection (North American Option -7 / European Product Number 80072) can be installed to allow the *Staufix®* FKA to be connected to a warning beacon, audible alarm or a building's central control system. The additional circuit board is plugged into the mother board inside the control unit and fastened with the 4 provided screws (as seen in Illustration 13).

4.7 Shortening the cables

The cables from the control unit to the *Staufix®* FKA can be shortened if necessary. However, please insure that there is always enough cable so that the *Staufix®* FKA motor and cover can be removed for inspection and maintenance.

NOTE: VDE 0100, VDE 01107, IEC guidelines or regulations issued by local power companies must always be followed. Also, the control unit must not be installed in areas where there is an explosion risk.

5. Initializing the system

While the control unit is unplugged connect the two supplied 9-volt batteries which are already located inside the control unit. Close the cover of the control unit and tighten the four screws. Plug in the control unit to a proper power supply. The control unit will perform a basic systems check. This is indicated by the 'CLOSED / TEST FLAP' light which will begin to blink about 15 seconds after either the two batteries are connected or the control unit is plugged in. During initialization the system checks the batteries, the optical probe and the motor connections to confirm that they are properly connected and in working order. It will also perform a flap closure check by closing and opening the motorized flap if initially in the open position or by opening the motorized flap if initially in the closed position.

If the entire system has been installed correctly the green 'POWER' LED on the control unit will turn on and remain on. The *Staufix®* FKA is now ready for operation.

When the system is ready for operation, make sure that the red manual closure lever for the backwater flap is in the 'FLAP OPEN (FREE HANGING)' or the 'FLAP OPEN (OUT OF FLOW)' position. If it is not, open it with the red manual closure lever. Also make sure that the the motorized flap is in the 'FLAP OPEN (OUT OF FLOW)' position. If it is not press the 'CLOSED / TEST FLAP' button which will open the motorized flap.

To check if the system is functioning properly, perform the steps in Chapter 10.3 and 10.4.

6. Operation

6.1 Examples of operation

	LED	LED Color	Power Operation	Battery Operation
System Functioning	POWER	green	On	Off
	ALARM	orange	Off	flashes
	BACKWATER	red	Off	Off
	CLOSED /			
	TEST FLAP	orange	Off	Off
Flap closing - backwater	POWER	green	On	Off
	ALARM	orange	On	Off
	BACKWATER	red	flashes	Off
	CLOSED /			
	TEST FLAP	orange	flashes	flashes
Flap closed - backwater	POWER	green	On	Off
	ALARM	orange	On	Off
	BACKWATER	red	flashes	Off
	CLOSED /			
	TEST FLAP	orange	On	Off
	AUDIBLE ALARM		beeping (fast)	beeping (2 seconds)

6. Operation

6.2 Control unit function buttons

'ALARM' button
The audible alarm can be acknowledged and turned off by pressing the 'ALARM' button. This will also turn off the 'ALARM' LED. The audible alarm is only re-activated the next time backwater occurs.

'CLOSED / TEST FLAP' button
This test button is used to operate the motorized backwater flap for maintenance or testing purposes. The flap can be closed by pressing the button and opened by pressing the button again. The 'CLOSED / TEST FLAP' LED will blink as the motorized flap is closing or opening and remain on once the flap is closed. An audible alarm will also sound once the flap has been closed by means of the button. A different audible alarm sounds when the flap has closed because of backwater.

Please note that if the motorized flap is closed using the 'CLOSED / TEST FLAP' button, it will not reopen automatically. The button must be pressed again to open the motorized flap. It is important to always check that the motorized flap is in the 'FLAP OPEN (OUT OF FLOW)' position after maintenance or testing has been completed.

In order to conserve battery power, the *Staufix®* FKA will not allow the user to close the motorized flap for maintenance or testing purposes while it is in battery back-up mode. Only the presence of backwater will close the motorized flap while the *Staufix®* FKA is in battery backup mode. During battery backup, backflow is displayed by an audible 'beep'. No LEDs are lit.

7. Problem notification

If problems occur during initialization and operation, the Staufix FKA's control unit will detect, diagnose and display the problem using the LEDs and audible alarms from the control unit.

7.1 Problems during power operation:

Notification	Problem	Solution	Tips
'POWER' LED blinks and audible alarms sounds	9 volt batteries in control unit not connected or low on power. Batteries missing or faulty.	Disconnect *Staufix® FKA* from power source, connect or replace batteries (Please dispose of old batteries properly). Close the cover and tighten the cover screws of the control unit and then plug in control unit.	If the batteries have not been connected, the system will have to be re-initialized. Disconnect the *Staufix®* FKA from its power source, wait 10 seconds, connect the two 9-volt batteries and plug the *Staufix®* FKA back in for re-initialization.
All four LEDs blink simultaneously and audible alarm sounds.	During initialization, motor cables not properly connected, polarity reversed or motor is damaged. During operation, motor control leads faulty.	Disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Inspect the motor and all cables to make sure they are in working order and properly installed. Replace motor if necessary. Reconnect batteries, close the cover and tighten the cover screws of the control unit and then plug in control unit.	Install motor and cables carefully to prevent incorrect connections and polarity problems.
The upper two LEDs ('POWER' and 'ALARM') and the lower two LEDs ('BACKWATER' and 'CLOSED / TEST FLAP') blink alternatingly and audible alarm sounds.	During initialization, optical probe cables not properly connected, polarity reversed or optical probe is damaged. During operation, optical probe leads faulty.	Disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Inspect the optical probe and all cables or install new optical probe if necessary. Reconnect batteries, close the cover and tighten the cover screws of the control unit and then plug in control unit.	The optical probe and its connections are checked by the control unit every 2 seconds.

7. Problem notification

Notification	Problem	Solution	Tips
'POWER' and 'ALARM' LEDs are on, the 'CLOSED / TEST FLAP' LED blinks and audible alarm sounds.	Motorized flap cannot close completely during initialization or testing. In this case the motorized flap is being obstructed by an object.	Disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Remove the cover of the *Staufix®* FKA, remove the obstruction. Reconnect batteries, close the cover and tighten the cover screws of the control unit and then plug in control unit.	When the motorized flap cannot close completely due to an obstruction, the control unit makes three attempts to close the motorized flap in an attempt to dislodge the obstruction. If it succeeds in dislodging the object, the *Staufix®* FKA returns to normal operation. If the obstruction remains in place an alarm will sound to notify the user of the blockage which could subject the building to backwater risk. Pressing the 'ALARM' button will not turn off the audible alarm. The audible alarm continues to sound to make sure that the user realizes that the blockage must be removed. Pressing the 'CLOSED / TEST FLAP' button will re-open the flap and stop the audible alarm. It is now important to disconnect the *Staufix®* FKA from the power source and to disconnect 9 volt batteries in control unit. Remove the cover of the *Staufix®* FKA, remove the obstruction and re-start the system.
'POWER' and 'ALARM' LEDs are on, 'BACKWATER' and 'CLOSED / TEST FLAP' LEDs blink alternatingly and audible alarm sounds	Motorized flap cannot close completely during times of backwater. In this case the motorized flap is being obstructed by an object.	Close manual closure lever to protect against backwater. Wait for backwater to subside then disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Remove the cover of the *Staufix®* FKA, remove the obstruction. Reconnect batteries, close the cover and tighten the cover screws of the control unit and then plug in control unit.	

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7. Problem notification

7.2 Problems during battery operation / power outages

Notification	Problem	Solution	Tips
'ALARM' LED blinks every two seconds.	*Staufix®* FKA is in battery back up mode (not receiving outlet power).	Check power source and restore main power if possible.	The *Staufix®* FKA will remain operational for approximately 10 hours on battery back up. After this time period the *Staufix®* FKA will go into 'sleep mode' (see Chapter 7.2, Additional Functions).
All LEDs blink simultaneously every 2 seconds and audible alarm sounds.	During initialization, motor cables not properly connected, polarity reversed or motor is damaged. During operation, motor control leads faulty.	Disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Inspect the motor and all cables. Install new motor if necessary. Reconnect batteries, close the cover and tighten the cover screws of the control unit and then plug in control unit.	During battery operation, motor problems are only detected while the motorized flap is in operation.
The upper two LEDs ('POWER' and 'ALARM') and the lower two LEDs ('BACKWATER' and 'CLOSED / TEST FLAP') blink alternatingly every two seconds and audible alarm sounds.	During initialization, optical probe cables not properly connected, polarity reversed or optical probe is damaged. During operation, optical probe leads faulty.	Disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Inspect the optical probe and all cables. Install new optical probe if necessary. Reconnect batteries, close the cover and tighten the cover screws of the control unit and then plug in control unit.	The optical probe and its connections are checked by the control unit every 60 seconds.

7. Problem notification

Notification	Problem	Solution	Tips
'CLOSED / TEST FLAP' LED blinks every 2 seconds and audible alarm sounds (motorized flap in the 'open' position).	Motorized flap cannot close completely during initialization or testing. In this case the motorized flap is being obstructed by an object.	Disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Remove the cover of the *Staufix®* FKA, remove the obstruction. Reconnect batteries, close the cover and tighten the cover screws of the control unit and then plug in control unit.	When the motorized flap cannot close completely due to an obstruction, the control unit makes three attempts to close the motorized flap in an attempt to dislodge the obstruction. If it succeeds in dislodging the object, the *Staufix®* FKA returns to normal operation. If the obstruction remains in place an alarm will sound to notify the user of the blockage which could subject the building to backwater risk. Pressing the 'ALARM' button will not turn off the audible alarm. The audible alarm continues to sound to make sure that the user realizes that the blockage must be removed. Shut the manual closure lever and wait for the backwater to subside. Disconnect *Staufix®* FKA from the power source and disconnect 9 volt batteries in control unit. Remove the cover of the *Staufix®* FKA, remove the obstruction and restart the system.
'CLOSED / TEST FLAP' LED blinks every 2 seconds and audible alarm sounds (motorized flap in the 'closed' position or between 'open' and 'closed').	Motorized flap cannot close completely during times of backwater due to an obstruction.	Close manual closure lever. Wait for backwater to subside then disconnect *Staufix®* FKA from power source, disconnect 9 volt batteries in control unit. Remove the cover of the *Staufix®* FKA, remove the obstruction. Close the cover and tighten the cover screws of the control unit and then plug in control unit. Make sure to reopen the manual closure lever after backwater has subsided.	

8. Additional Functions

8.1 Self Diagnosis System (SDS)

The *Staufix®* FKA control unit is equipped with SDS. This system automatically tests the motor and the motorized flap once every week. During this test the motorized flap will close once, check to see that it can make a complete water tight seal and then re-open. If faults or an obstruction in the valve is detected during this test, the problems will be indicated on the control unit and can be corrected by following the instructions in Chapter 7.

8.2 Sleep mode

The *Staufix®* FKA can operate on battery backup power for approximately 10 hours after which it will automatically go into sleep mode. This is a backwater protection precaution when outlet power is no longer available and battery power is low. When the *Staufix®* FKA goes into sleep mode it will shut the motorized flap until power is restored to the unit. During this time there will be no audible or visual warnings unless the system is equipped with the signalling device with auxiliary connection in which case this system will still receive a signal. When power is returned to the *Staufix®* FKA it will return to normal operation.

8.3 Battery life and replacement

While the *Staufix®* FKA is connected to a suitable power supply, the unit continuously checks the condition of the two batteries. If at time of initialization the batteries hold under 12.5 Volts total power, the *Staufix®* FKA will not initialize itself. In this case, unplug the *Staufix®* FKA control unit from its power source, check and replace the batteries if necessary and then reconnect the control unit to its power source. The estimated life of new batteries is four years. Batteries certified for use with the KESSEL *Staufix®* FKA are Duracell 9 Volt Type MN 1604/6LR61 (Requirement - 2). If discarding batteries, please do so properly.

9. Technical Data for control unit

Voltage	120 Volt AC (USA model) / 230 Volt AC (European Model)
Frequency	60 Hz (USA model) / 50 Hz (European Model)
Signalling device with auxiliary connection	42 Volt DC / 0.5 A
Operating temperature range	32 deg F - 104 def F (0°C - 40°C)
Splash protection rating	IP 54 (Splash proof)
Motor cable check cycle	Checked each time motor is operated
Optical probe cable check cycle	Continuously during power operation / Every 60 sec during battery operation
Optical probe check cycle	Continuously during power operation / Every 2 sec during battery operation
Battery condition check cycle	Every 300 sec
Motor closing time	30 seconds

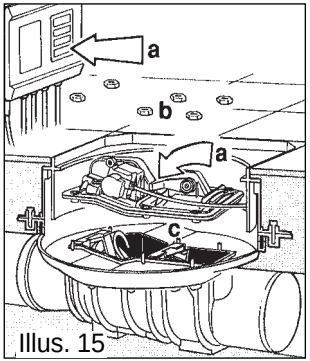
10. Inspection and Maintenance

10.1 Inspection

The *Staufix®* FKA should be inspected every month by the operator or a person authorized to do so. The control unit and valve should be visually inspected and the motorized flap should be closed and re-opened by pressing the 'CLOSED / TEST FLAP' button on the control unit. The manual flap closure lever should also be closed and opened by hand several times to make sure that it is in proper working order. When the monthly inspection is completed, make sure that both the motorized and manual backwater flaps are both in the open position so that wastewater can drain normally through the valve.

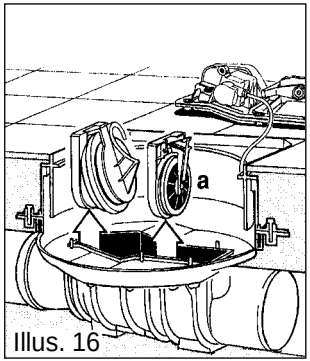
10.2 Maintenance

The *Staufix®* FKA must be inspected every six months by a licensed professional servicer as shown in Illus. 15 - 19. It is important not to drain any plumbing fixtures connected to the *Staufix®* FKA during this inspection and also not to perform this inspection during times of potential backwater (heavy rain / flooding).



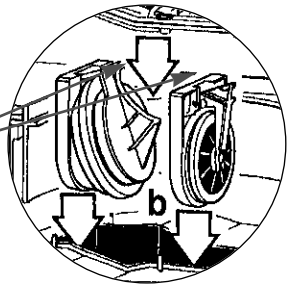
Illus. 15

a) Close the motorized flap using the 'CLOSED / TEST FLAP' button and also close the manual flap by hand using the manual flap closure lever.
b) Unscrew the six nuts on the cover of the valve
c) Remove the cover being careful not to pull on the cables connected to the control unit

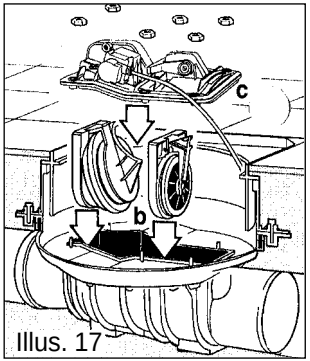


Illus. 16

a) Remove both backwater flaps along with their housings
b) Clean all parts
c) Check condition of all rubber seals



Apply grease to all seals and to curved interior of motorized flap grip.



Illus. 17

a) Apply grease to the rubber seal on the outside of both of the support brackets and also apply grease in the body of the valve where the support brackets are seated
b) Replace both backwater flaps along with their support brackets in their appropriate slots
c) Replace the cover. Retighten the six bolts in a crosswise pattern to a torque of 6 lbf-ft (8Nm).
d) Now carry out a operational and optical probe check as described in section 10.3 and 10.4

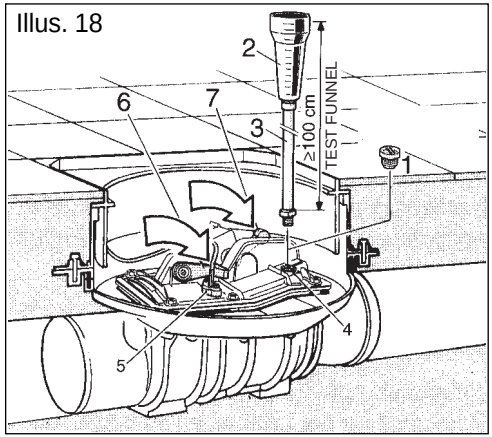
10. Inspection and Maintenance

10.3 Operational Check

(According to DIN 19578)
(Please see Illustration 18)

Close the motorized flap (#7) using the 'CLOSED / TEST FLAP' button and also close the manual flap by hand using the manual flap closure lever (#6). Remove the 1/2 inch plug (#1) from the cover of the *Staufix®* FKA with a large screwdriver and by hand screw on the funnel (#2) with its extension if available (#3, not included). Now pour water into the funnel until a level of 100 cm (1 meter) is reached. Over the next ten minutes observe the water level in the funnel and refill if necessary keeping track of how much water is needed to keep the water level constant. If after ten minutes the amount of water needed to keep the water level constant at 100 cm is less than 500 cubic centimeters (1/2 liter, approx 1/2 quart), the backwater valve is considered to be water tight. This is a performance test

Illus. 18



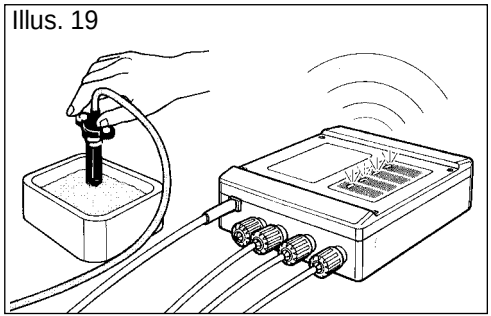
used by the German Industry Norm. After the test, remove the calibration funnel and extension tube by hand and with a large screwdriver firmly replace the plastic plug. Re-open the manual closure lever by hand to the 'open' (vertical) position and re-open the motorized flap by pressing the 'CLOSED / TEST FLAP' button on the control unit.

10.4 Testing the optical probe

(Please see Illustration 19)

Unscrew the two screws on the optical probe and remove the optical probe. Immerse the lens of the optical probe in a glass of water. The motorized flap should begin to close as well as the visual and audible alarms sounding once the motorized flap is fully closed. As soon as the optical probe is removed from the water, the motorized flap should re-open and the visual and audible alarms should stop. If the optical lens is dirty it should be cleaned with a clean soft cloth or tissue. When finished, re-insert the optical probe and tighten the two screws.

Illus. 19



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11. Replacement Parts

Description	Order Number
FKA Motor (limited submersibility) (IP 68)	80075
Signalling device with auxiliary connection	80072 (Option -7 / USA)
Audible signalling device with extension cable (33 feet)	20161
Audible signalling device with extension cable (66 feet)	20162 (Option -6 / USA)
FKA cover with manual closure lever	80026
FKA motorized flap with large rubber seal	80031
FKA motorized flap housing with large rubber seal	80032
Manual closure backwater flap with housing	80036
Test funnel	70214
Seal for FKA cover with manual closure lever	70202
Inner large seal for motorized flap	70230
Outer thin seal for motorized flap housing	70240
Outer seal for manual closure backwater flap housing	70157
Seal for manual closure backwater flap (flat seal)	70156
9 Volt battery (x1)	197-081

12. Warranty

This product is warranteed to be free of defects in material and workmanship. This warranty is for a period of six (6) months and begins with the date of purchase. This warranty is only valid on material and workmanship that upon the manufacturer's inspection is deemed to be the fault of the manufacturer. Warranty claims shall be submitted to the manufacturer in writing. In cases where the manufacturer is found to be at fault, the manufacturer shall have the option of repairing or replacing the defective item. The manufacturer shall not be responsible for any labor or shipping charges or any loss, injury or damages whatsoever, including incidental or consequential damages.

Notes

Notes

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